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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/702,176	11/05/2003	James D. Lykowski	FMO P-3794-2	7529

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EXAMINER

QUARTERMAN, KEVIN J

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 07/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H:A

Office Action Summary	Application No. 10/702,176	Applicant(s) LYKOWSKI ET AL.	
	Examiner Kevin Quarterman	Art Unit 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 November 2003.
 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
 4a) Of the above claim(s) 17-20 is/are withdrawn from consideration.
 5) ☒ Claim(s) 11-13 is/are allowed.
 6) ☒ Claim(s) 1-9 and 14-16 is/are rejected.
 7) ☒ Claim(s) 10 is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 05 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>0804; 0205</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-16, drawn to an ignition device, classified in class 313, subclass 141.
 - II. Claims 17-20, drawn to a method of manufacturing an electrode assembly for use in an ignition device, classified in class 445, subclass 7.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the electrode assembly can be made by providing a precious metal insert having a mechanical interlock feature and a sparking surface; providing an elongated electrode having a lower axial end with a blind hole extending into the lower axial end; chemically, instead of mechanically, deforming the lower axial end such that an inner surface of the blind hole circumferentially contacts an outer surface of the mechanical interlock feature; inserting the precious metal insert into the blind hole such that at least a portion of the mechanical interlock feature is located within the blind hole; and intermittently welding the precious metal insert to the electrode about an outer peripheral interface between the insert and electrode, whereby the

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intermittent welding results in a weld having interruptions that permit trapped gases to escape from the blind hole.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

6. During a telephone conversation with Jon Shackelford on 10 May 2005 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-16. Affirmation of this election must be made by applicant in replying to this Office action. Claims 17-20 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-5, 8, 9, and 14-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Oshima (US 5,347,193).

10. Regarding independent claim 1, Figure 2 of Oshima '193 shows an electrode assembly for use in an ignition device comprising an elongated center electrode (4) having a lower axial end with a blind hole (43) extending into the lower axial end; and a precious metal insert (5) having a mechanical interlock feature and a sparking surface (53), wherein the mechanical interlock feature is located at least partially within the blind hole with the lower axial end engaging the interlock feature such that an inner surface of the blind hole circumferentially contacts an outer surface of the mechanical interlock feature, and wherein the center electrode is joined to the precious metal insert by a peripheral weld (5A) with the weld including at least one interruption that permits trapped gases to escape from the blind hole.

11. Regarding claim 2, Figure 2 of Oshima '193 shows the mechanical interlock feature of a stepped design having upper and lower axial sections, such that the radius of the mechanical interlock feature abruptly changes between the upper and lower axial sections.

12. Regarding claim 3, Figure 2 of Oshima '193 shows the radius of the mechanical interlock at the upper axial section greater than the radius of the mechanical interlock at the lower axial section.

13. Regarding claim 4, Figure 2 of Oshima '193 shows the radius of the interlock feature of a sloped design having upper and lower axial sections, such that the radius of the mechanical interlock feature gradually changes between the upper and lower axial sections.

14. Regarding claim 5, Figure 2 of Oshima '193 shows the radius of the mechanical interlock at the upper axial section greater than the radius of the mechanical interlock at the lower axial section.

15. Regarding claim 8, Oshima '193 discloses the electrode including a copper core (col. 3, ln. 66-68).

16. Regarding claim 9, Oshima '193 discloses the precious metal insert being made of platinum, iridium, a combination of platinum and iridium, or an alloy that includes either platinum or iridium (col. 3, ln. 60-63).

17. Regarding independent claim 14, Figure 1 of Oshima '193 shows an ignition device for use in an internal combustion engine comprising a metallic shell (2) having a central bore (31); an insulator (3) secured within the central bore and having an axial bore that is generally coaxial with the central bore; and Figure 2 of Oshima '193 shows a center wire assembly secured within the axial bore and at least comprising an elongated electrode (4) having a lower axial end with a blind hole (43) extending into the lower axial end; and a precious metal insert (5) having a mechanical interlock feature

and a sparking surface (53), wherein the mechanical interlock feature is located at least partially within the blind hole with the lower axial end engaging the interlock feature such that an inner surface of the blind hole circumferentially contacts an outer surface of the mechanical interlock feature, and wherein the center electrode is joined to the precious metal insert by a peripheral weld (5A) with the weld including at least one interruption that permits trapped gases to escape from the blind hole.

18. Regarding claim 15, Figure 1 of Oshima '193 shows the ignition device comprising a spark plug.

19. Regarding claim 16, Figure 1 of Oshima '193 shows the ignition device comprising an igniter.

20. Claims 1 and 6-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Oshima (US 5,273,474).

21. Regarding independent claim 1, Figure 11 of Oshima '474 shows an electrode assembly for use in an ignition device comprising an elongated center electrode having a lower axial end with a blind hole (portion displaced by 32) extending into the lower axial end; and a precious metal insert (3a) having a mechanical interlock feature and a sparking surface (31), wherein the mechanical interlock feature is located at least partially within the blind hole with the lower axial end engaging the interlock feature such that an inner surface of the blind hole circumferentially contacts an outer surface of the mechanical interlock feature, and wherein the center electrode is joined to the precious metal insert by a peripheral weld (g) with the weld including at least one interruption that permits trapped gases to escape from the blind hole.

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22. Regarding claim 6, Figure 11 of Oshima '474 shows a lower portion of the precious metal insert including an outer radius that is equal to an outer radius of the lower axial end such that a smooth transition occurs between adjacent outer surfaces of the electrode and the precious metal insert.

23. Regarding claim 7, Figure 11 of Oshima '474 shows the weld circumferentially extending around the assembly at the smooth transition.

24. Regarding claim 8, Oshima '474 discloses the electrode including a copper core (col. 4, ln. 24).

25. Regarding claim 9, Oshima '474 discloses the precious metal insert being made of platinum, iridium, a combination of platinum and iridium, or an alloy that includes either platinum or iridium (col. 6, ln. 43-44).

Allowable Subject Matter

26. Claims 11-13 are allowed.

27. Claim 10 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

28. The following is a statement of reasons for the indication of allowable subject matter: Regarding claim 10, the prior art of record neither shows an electrode assembly for use in an ignition device comprising, in addition to other limitations of the claim, a weld including three interruptions, each spaced approximately 120° from the other interruptions.

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29. Regarding independent claim 11, the prior art of record neither shows or suggests an electrode assembly for use in an ignition device comprising, in addition to other limitations of the claim, a vent hole extending from an interior location of a blind hole to a location exterior or the assembly. Due to their dependency upon independent claim 11, claims 12-13 are also allowable.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Quarterman whose telephone number is (571) 272-2461. The examiner can normally be reached on M-TH (7-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Kevin Quarterman
Examiner
Art Unit 2879